Audiovisual processing of speech and non-speech oral gestures: Plasticity of cross-modal integration

Initiative: Dynamik und Adaptivität neuronaler Systeme (beendet)

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In this project the perception of speech and non-speech facial movements is considered as a paradigm to compare multisensory integration (MSI) mechanisms in a highly overlearned and a "novel" domain and will be used to study the learning-induced plasticity of these mechanisms. The project combines three approaches: (1) a be- havioural approach based on data from normal subjects and from pa- tients with focal brain lesions, (2) an imaging approach based on fMRI activation studies and (3) a computational modelling approach based on a model incorporating dynamics at the neuronal and synaptic level. The behavioural and imaging approaches will use similar experimental paradigms, hence direct comparison of the results will be feasible. The level of detail achieved in the neural modelling approach allows both the fMRI-activation and the behavioural response to be simulated for comparison with real data.

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